

LISTING OF CLAIMS

1. (Previous presented) A semiconductor device comprising:

a substrate;

a semiconductor chip mounted on the substrate;

external electrodes provided on the back of the substrate, for connecting electrodes of the semiconductor chip to the outside;

a sealing member encapsulating the semiconductor chip on the substrate; and

a heat sink plate fixed by the sealing member, wherein

the heat sink plate has concavo-convex portions formed on an exposed surface thereof and is disposed to make direct contact with a main surface on which semiconductor elements of the semiconductor chip are formed and to be detached from the substrate;

the heat sink plate is so formed that the convex portions do not protrude from the surface of the sealing member to the outside; and

the heat sink plate has a broader area than the main surface of the semiconductor chip.

3. (Previously presented) A semiconductor device comprising:

a substrate;

a semiconductor chip mounted on the substrate;

external electrodes provided on the back of the substrate for connecting electrodes of the semiconductor chip to the outside;

a sealing member for encapsulating the semiconductor chip on the substrate; and

a heat sink plate fixed by the sealing member, wherein
the heat sink plate has a concavo-convex portions formed on an exposed surface
thereof and is disposed so as to be opposed to a main surface on which semiconductor
elements of the semiconductor chip are formed and so as to adjoin the main surface with a
thin sealing member placed on the main surface being interposed therebetween, and so as to
be detached from the substrate;

the heat sink plate is formed so that the convex portions do not protrude from the
surface of the sealing member to the outside; and

the heat sink plate has a broader area than the main surface of the semiconductor
chip.

7. (Previously presented) A semiconductor device, comprising:
a substrate;
a semiconductor chip mounted on the substrate;
external electrodes provided on the back of the substrate, for connecting electrodes
of the semiconductor chip to the outside;
a sealing member for encapsulating the semiconductor chip on the substrate; and
a heat sink plate fixed by the sealing member, wherein
the heat sink plate has a heat dissipation fin formed integrally therewith, wherein the
heat sink plate and the heat dissipation fin have engaging portions brought into engagement
with each other, whereby the engaging portions allow detachment of the heat dissipation fin
from the heat sink plate.

9. (Previously presented) The semiconductor device according to claim 7, wherein the engaging portions are respectively formed at the heat sink plate and the heat dissipation fin and comprise a screw and a threaded hole brought into engagement with each other.

10. (Original) The semiconductor device according to claim 7, wherein the heat sink plate is disposed so as to be opposed to a main surface on which semiconductor elements of the semiconductor chip are formed.

12. (Previously presented) The semiconductor device according to claim 10, wherein the engaging portions are respectively formed at the heat sink plate and the heat dissipation fin and comprise a screw and a threaded hole brought into engagement with each other.